



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,664	03/15/2001	Roy P. Demott	2168A	5740

7590

01/09/2003

Terry T. Moyer
P. O. Box 1927
Spartanburg, SC 29304

EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
----------	--------------

1771

10

DATE MAILED: 01/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,664

Applicant(s)

DEMOTT ET AL.

Examiner

Jenna-Leigh Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) 30-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 43-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7,9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Preliminary Amendment A, submitted as Paper No. 8 on April 18, 2002, has been entered. Claims 51 – 81 have been added. Therefore, the pending claims are 1 – 81.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1 – 29 and 45 – 81, drawn to a composite fabric, classified in class 428, subclass 88.
 - II. Claims 30 – 42, drawn to a method of making a composite fabric, classified in class 156, subclass 60.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the composite fabric can be made by coating the fabric with an uncured rubber backing, instead of curing the rubber backing before laminating the two layers together.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Daniel Alexander on December 6, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 1 – 29

Art Unit: 1771

and 45 – 81. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30 – 42 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

7. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

8. The information disclosure statement filed October 15, 2001 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of references CH 673010, JP 59055219, BE 700859, and DE 29717879 which are not in the English language. The references have been placed in the application file, but the information referred to therein has not been considered.

9. Further, it is noted that EP 0631860 was mistakenly identified as EP 9631860 on the IDS sent in on October 15, 2001. This has been corrected on the IDS and initialed to show that the reference was considered.

Claim Objections

Art Unit: 1771

10. Claims 68 and 78 are objected to because of the following informalities: The claims are partially unreadable due to holes that were punched in the page, and through the first lines of the claims, to secure the amendment into the file. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 5, recites that the "pile yarn is a micro-denier yarn of less than or equal to 1.1 denier". However, the specification states that the knitted fabric is produced according the US 5,916,273, which teaches that the pile yarn is made of filaments having a denier of less than 1.1, while the total denier of the pile yarn is at least 50. Thus, the 1.1 denier should be the denier of the individual filaments in the yarn and the pile yarn, itself, should have a size of at least 50 denier.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 2, 6, 12, 13, 15, 20, 46, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. The phrase "microknitted" in claim 2 is indefinite. Is the Applicant stating that the knitted fabric is made from microfibers or is the fabric knitted in a manner where the interlocking loops are considered "micro"? And if the loops are themselves are micro what size loop does that Applicant consider "micro"? For purposes of examination the phrase is interpreted as a knitted fabric at least partially made with microfibers.

Art Unit: 1771

15. The phrase "the ground yarn is a monofilament of no less than 10 denier, or a multifilament yarn" in claim 6 is indefinite. Is the Applicant claiming that the ground yarn can be a monofilament yarn having a denier not less than 10 or any multifilament yarn? Or, instead are both the monofilament and multifilament yarns required to be not less than 10 denier? For purposes of examination the claim is interpreted as requiring any size multifilament yarn.

16. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 12 recites the broad recitation 0.1 – 2.0 mm, and the claim also recites 0.2 – 0.5 mm which is the narrower statement of the range/limitation.

17. In the present instance, claim 13 recites the broad recitation 0.2 – 100 mm², and the claim also recites 1.0 – 20 mm² which is the narrower statement of the range/limitation.

18. In the present instance, claim 20 recites the broad recitation 0.5 – 5 mm, and the claim also recites 1 – 3 mm which is the narrower statement of the range/limitation.

Art Unit: 1771

19. The term "average height" in claim 12 is indefinite. Is the "height" the pile height or the difference between the higher pile and the lower pile?
20. The phrase "surface formations have an average surface area" in claim 13 is indefinite. Is the "surface area" the total area of the mat covered by the "surface formations", or is it the area covered by a single "surface formation"?
21. The phrase "the surface formations are formed on the face of the rubber backing" in claim 15 is indefinite. Claim 12, from which claim 15 depends, recites that the "surface formations" are on the fabric layer. How is it that the "surface formations" in the textile layer are formed on the face of the backing? Does the backing have separate "surface formations" which are in addition to those formed on the fabric?
22. Regarding claims 46 and 47, the phrase "or the like" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).
23. With respect to claims 43, 44, 62 and 65, the claims are examined based on the structurally features produced by the method limitations recited in claims 30, 41, 39, and 40, respectively. Therefore, the prior art need only have the physical structure produced by the method steps and are not required to be made by the same method steps to read on the claims.

Claim Rejections - 35 USC § 102

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

Art Unit: 1771

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

25. Claims 1, 20, 21, 28, 29, 43 – 46, 57, 70, 71, and 74 – 77 are rejected under 35

U.S.C. 102(b) as being anticipated by Reeder et al. (5,262,092).

Reeder et al. discloses a composite comprising a warp-knitted polyester fabric and an elastomeric polymer coating applied to one side of the fabric to render it impervious to liquid (abstract). The elastomeric coating is preferably rubber (column 4, lines 50 - 52). Thus, claims 1, 20, and 43 – 46 are anticipated by Reeder et al.

Claim 28 is also rejected over Reeder et al. since the composite fabric would inherently be printable, non-fraying, and dimensionally stable.

Further, claims 21, 29, 57, 70, 71, and 74 – 77 are rejected since these claims only recite the intended use of the composite fabric and fail to further limit the structure of the composite. It has been held that a recitation with respect to the manner in which a claimed product is intended to be employed does not differentiate the claimed product from a prior art product satisfying the claimed structural limitation. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

26. Claims 1, 2, 4 – 7, 11, 14, 18 – 21, 28, 29, 43 – 47, 49, 50, 57, 65, 70, 71, 74 – 77, 80, and 81 rejected under 35 U.S.C. 102(b) as being anticipated by Nagahama et al. (5,524,317).

Nagahama et al. discloses a composite mat comprising an elastomer backing applied to the surface of a base fabric on which piles are implanted (column 3, lines 65 – 67). The base fabric may be a knitted fabric made of synthetic fibers such as polyester or polyamide (column 6, lines 28 – 34). The yarns in the base fabric correspond to the Applicant's ground yarns. The mat

Art Unit: 1771

itself can have pile of any length, shape or color (column 6, lines 25 – 27). In fact the pile length may be different, for example, high-cut/low loop design with pile yarns ranging from 0.05 to 1300 denier (column 6, lines 57 – 61). The different pile height would create the surface formations recited by the Applicant. The pile yarns are incorporated into the base fabric by tufting sewing, hooking, or the like (column 6, lines 54 – 55). Finally, the pile yarns are made from cotton, rayon, or nylon fibers, which are inherently absorbent and hydrophilic (column 6, lines 50 – 53). The elastomeric coating various synthetic rubbers (column 6, lines 64 – 67). Further, Nagahama et al. discloses using rubber mats with a thickness of 2 mm (column 10, line 35). And, the mat is easily recovered and washed (column 1, lines 20 – 21). Therefore, claims 1, 2, 4 – 7, 11, 14, 18 – 20, 28, 43 – 47, 49, 50, and 65 are anticipated.

Additionally, claims 21, 29, 57, 70, 71, 74 – 77, 80, and 81 are rejected since these claims only recite the intended use of the composite fabric and fail to further limit the structure of the composite.

27. Claims 1 – 3, 8, 16 – 21, 28, 29, 43 – 47, 49, 51, 52, 55 – 61, 65 – 71, 74 – 77, 80, and 81 are rejected under 35 U.S.C. 102(e) as being anticipated by Vinod (5,965,232).

Vinod discloses a decorative composite floor material which includes an upper decorative fabric, a dimensionally stabilizing intermediate layer, and a lower cushioning layer, which are combined together to render the floor covering impervious to liquid (abstract). The decorative fabric is a textile fabric composed of yarns fibers, or filaments and is printed or dyed to create decorative surface, column 2, line 61 – column 3, line 16). As shown in Figure 1, the designs can include a border at the edge of the fabric. The textile fabric can be a knitted fabric made from natural or synthetic fibers including cotton, rayon, polyester, polyamides or polyolefins

Art Unit: 1771

(column 3, lines 17 – 23). Cotton, rayon and polyamide, fibers are inherently hydrophilic and absorbent fibers. The yarns can have filaments from 1 to 25 denier as well as sub-denier, or microdenier fibers (column 3, lines 27 – 29). Additionally, the textile fabrics may be textured (column 3, line 25).

The stabilizing layer can also be a knitted fabric which has been brushed to produce a pile surface (column 6, lines 8 – 18). Finally, the cushioning layer can be any suitable foamed rubber layer (column 6, lines 59 – 60). The thickness of the cushioning layer is at least 0.1 in, or 2.53 mm (column 7, lines 2 – 4).

Thus, claims 1 – 3, 8, 16 – 20, 28, 43 – 47, 49, 51, 52, 55, 56, 60, 61, and 65 – 69 are anticipated. Claims 21, 29, 57 – 59, 70, 71, 74 – 77, 80, and 81 are rejected since these claims only recite the intended use of the composite fabric and fail to further limit the structure of the composite.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claims 1 – 4, 6 – 9, 11, 14, 18, 19, 21 – 29, 43 – 50, 57, 62, 65, and 70 – 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. (WO 96/32526) in view of Rock et al. (5,817,391) and Peterson (6,381,778).

Cooper et al. discloses a composite fabric comprising a spacer fabric layer and a liquid impermeable lower surface layer (page 3, line 25 – page 4, line 2). The knitted spacer fabric has

Art Unit: 1771

an upper surface which allows air to easily pass through the fabric layer and conducts liquid away from the surface (page 5, lines 8 – 14). The yarns used in the spacer fabric can be made from polyamides or polyesters (page 11, lines 26 – 27), as well as natural yarns such as cotton (page 12, lines 6 – 8). The liquid impermeable layer can be a polymeric material which is coated onto the back of the fabric (page 9, lines 20 – 28). The composite fabric can be used to form a mattress or bedding material (page 1, lines 8 – 25).

Cooper et al. fails to teach using a rubber layer as the liquid impermeable layer. Peterson is drawn to bedding materials comprising a composite material having an absorbent layer and a liquid impermeable layer (abstract). Peterson teaches that the liquid impermeable layer can be formed from either plastic or rubber. Therefore, it would have been obvious to one of ordinary skill in the art to substitute a liquid impermeable layer for the liquid impermeable layer taught by Cooper et al. since it known that rubber is a liquid impermeable layer which can be used in absorbent bedding articles.

Cooper et al. fails to teach using a knitted spacer fabric with pile yarns extending from the surface. Rock et al. is drawn to knit spacer fabric for use in bedding materials. Rock et al. discloses the knit spacer fabric has a first hydrophilic fabric layer, a hygroscopic second fabric layer connected by resilient yarns (column 1, lines 21 – 26). The spacer fabric is made from monofilament or multifilament polyester yarns (column 2, lines 23- 24). The pile is formed by brushing or sanding the upper surface and raising the fibers from the yarns which interconnect the two fabric layers (column 2, lines 54 – 63). The raised fibers conduct moisture away from the patient. The yarn in the first fabric layer and the pile yarn may be rendered hydrophilic, by chemically treating the yarns, to help transport moisture away from the surface (column 2, lines

Art Unit: 1771

40 – 45 and 65 – 67). The yarns in the first fabric layer act as the Applicant's ground yarns. The first fabric comprises yarns having a size between 300 to 600 denier with individual fibers between 0.3 and 2.5 denier (column 2, lines 33 – 35). The absorbent second fabric layer can be made from any moisture absorbent material such as cotton (column 3, lines 9 – 12). Thus, it would have been obvious to one of ordinary skill in the art to substitute the spacer fabric taught by Rock et al. for the spacer fabric taught by Cooper et al. to produce a composite which has improved wicking ability, comfort, and hand, due to the chemically rendered hydrophilic yarns and the pile yarns which help to wick moisture away from the surface of the fabric while allowing air to flow freely through the fabric. Thus, claims 1 – 4, 6 – 9, 18, 19, 22, 23, 26, 27, 28, 43 – 50, 62, and 65 are rejected.

Claims 11 and 14 are also rejected since the process of brushing or sanding the surface would inherently produce raised regions randomly on the fabrics surface.

Although the limitations of absorbency and liquid retention are not explicitly taught by Cooper et al. or Rock et al, it is reasonable to presume that said limitations would be met by the combination of the two references. Support for said presumption is found in the use of similar materials (i.e. knit polyester chemically rendered hydrophilic) and in the similar production steps (i.e. laminating the knit fabric layer to a impermeable backing) used to produce the absorbent fabric. The burden is upon the Applicant to prove otherwise. Thus claims 24 and 25 are rejected.

Finally, claims 21, 29, 57, and 70 – 81 are rejected since these claims only recite the intended use of the composite fabric and fail to further limit the structure of the composite.

Art Unit: 1771

30. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al., Rock et al, and Peterson as applied to claim 9 above, and further in view of Schuette et al. (5,725,951).

The features of Cooper et al., Rock et al, and Peterson have been set forth above. While Rock et al discloses, chemically treating the fabric to make it hydrophilic, Rock et al. fails to teach treating the yarns with anionic-ethoxylated sulfonated polyester and a high molecular weight ethoxylated polyester to produce a hydrophilic material. Schuette et al. discloses a chemical treatment which can be added to polyester to improve the washability and moisture transport properties of the fibers (column 1, lines 19 – 21). Schuette et al. discloses treating the fibers with high molecular weight ethoxylated polyester and anionic ethoxylated sulfonated polyesters. Thus, it would have been obvious to one of ordinary skill in the art to add the chemical treatment taught by Schuette to the fabric to improve the moisture transport properties of the fabric. Therefore, claim 10 is rejected.

31. Claims 16, 17, 51 – 56, 58 – 61, 63, 64, and 66 – 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al., Rock et al, and Peterson as applied to claims 1, 22, 28, 57, 43, 44, 62, and 65 above, and further in view of Kaufman.

The features of Cooper et al., Rock et al, and Peterson have been set forth above. Cooper fails to teach printing or decorating the fabric surface. Kaufman discloses methods of producing multicolored images and graphics onto the surface of pile products. Furthre, Kaufman teaches that brilliantly colored products are widely sought and popular with consumers (column 1, lines 23 – 26). Kaufman teaches applying the images by sublimation printing using various dyes (column 4, lines 50 – 55). Therefore, it would have been obvious to one of ordinary skill in the

Art Unit: 1771

art to add printed images as taught by Kaufman to the surface of the fabric taught by Cooper et al. to produce a visually attractive fabric which is popular with consumers. Thus, claims 16, 17, 51 – 56, 58 – 61, 63, 64, and 66 – 69 are rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
January 3, 2003



TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700